OIPE IAP18
JUN 16 2006
PATENT & TRADEMARK OFFICE

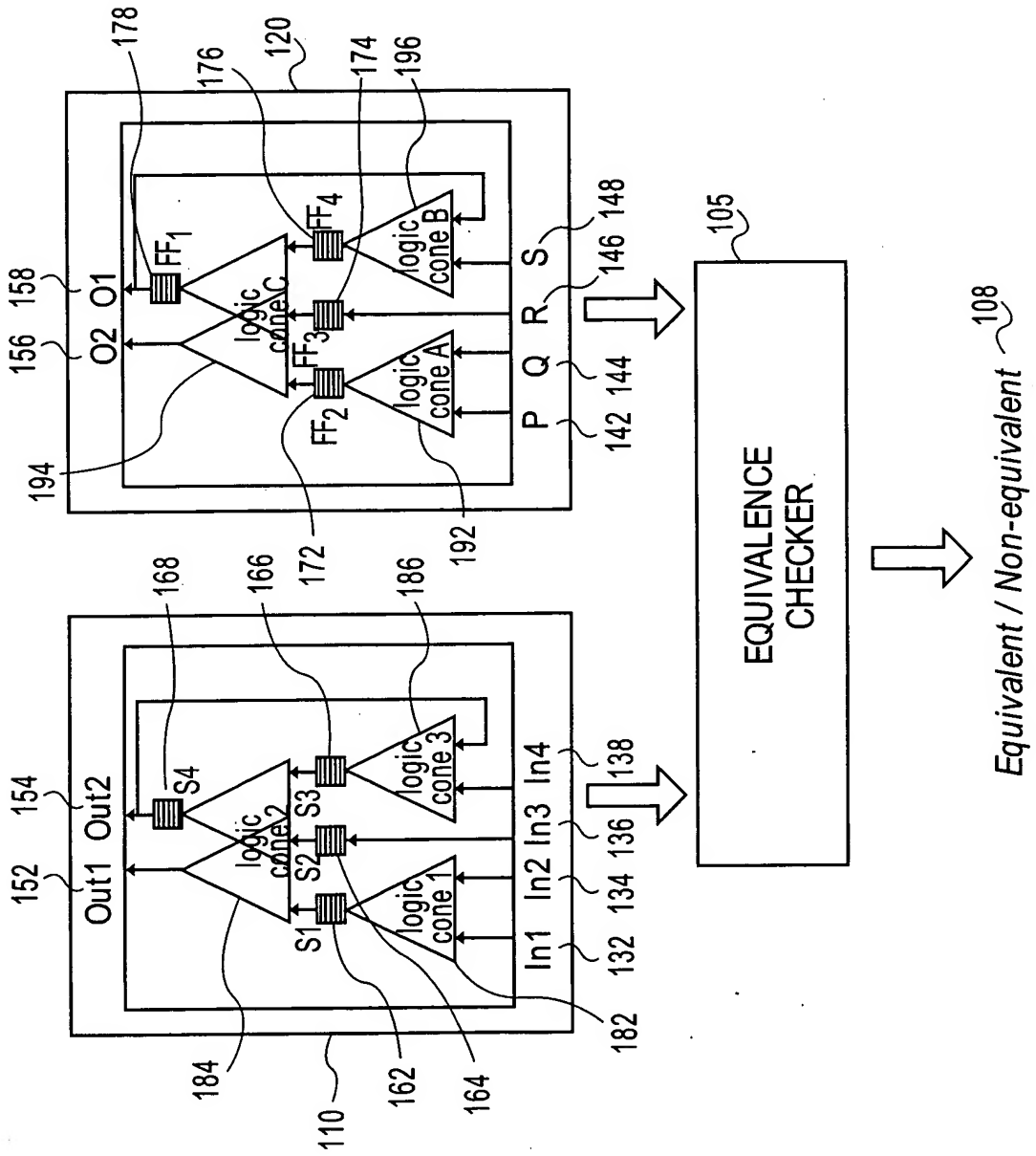

FIG. 1

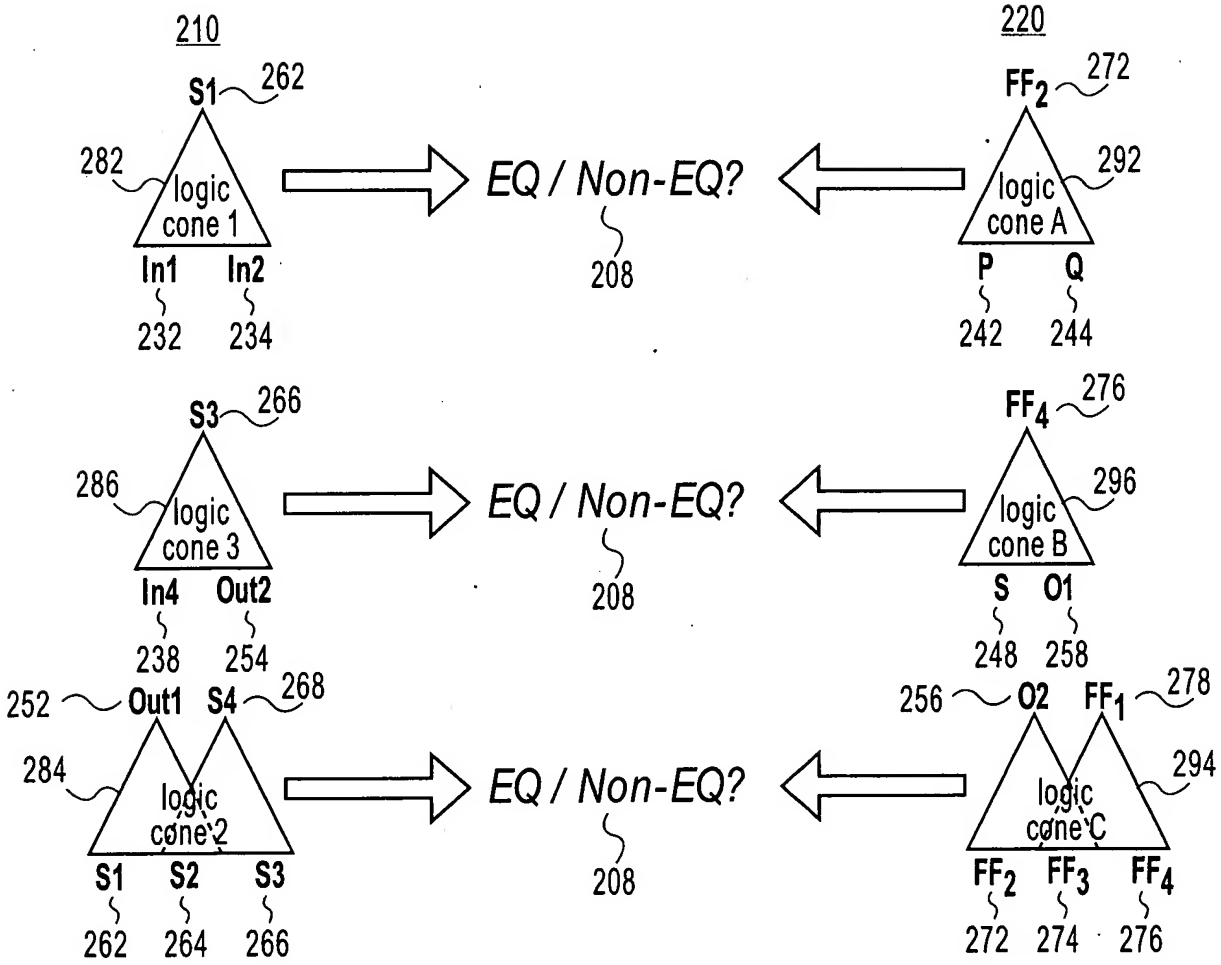
210
S1
262
282
logic cone 1
In1
In2
232
234
EQ / Non-EQ?
208
220
FF2
272
logic cone A
292
P
Q
242
244
S3
266
286
logic cone 3
In4
Out2
238
254
EQ / Non-EQ?
208
FF4
276
logic cone B
296
S
O1
248
258
252
Out1
S4
268
284
logic cone 2
S1
S2
S3
262
264
266
EQ / Non-EQ?
208
256
O2
FF1
278
294
logic cone C
FF2
FF3
FF4
272
274
276

FIG. 2

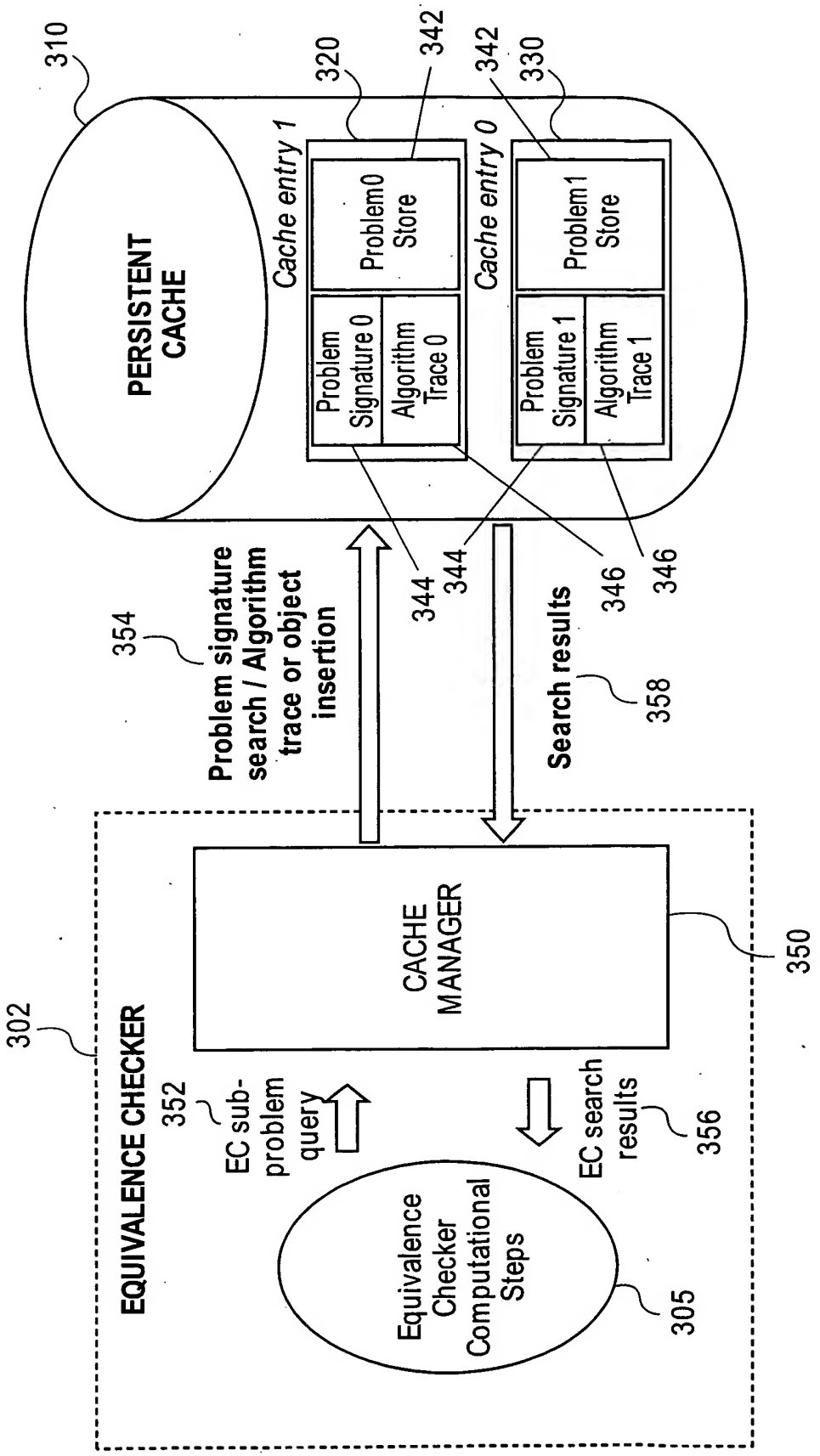
310
320
342
342
330
PERSISTENT CACHE
Cache entry 1
Problem0 Store
Problem Signature 0
Algorithm Trace 0
Cache entry 0
Problem1 Store
Problem Signature 1
Algorithm Trace 1
344
344
346
346
354
Problem signature search / Algorithm trace or object insertion
Search results
358
CACHE MANAGER
350
302
EQUIVALENCE CHECKER
352
EC sub-problem query
EC search results
356
Equivalence Checker Computational Steps
305

FIG. 3

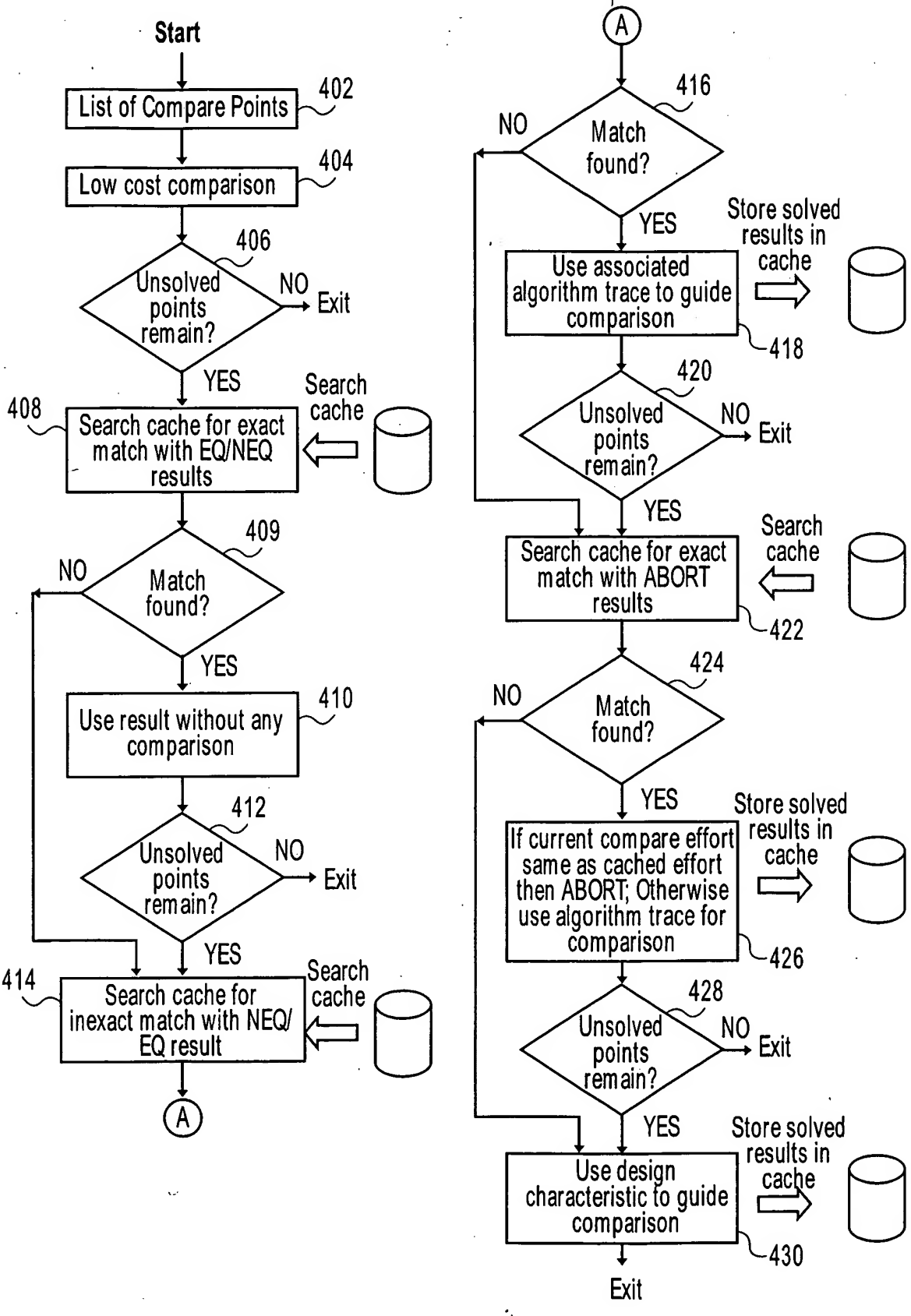
Start
List of Compare Points
402
Low cost comparison
404
406
Unsolved points remain?
NO
Exit
YES
Search cache
408
Search cache for exact match with EQ/NEQ results
409
Match found?
NO
YES
410
Use result without any comparison
412
Unsolved points remain?
NO
Exit
YES
414
Search cache for inexact match with NEQ/ EQ result
Search cache
A
A
416
Match found?
NO
YES
Store solved results in cache
Use associated algorithm trace to guide comparison
418
420
Unsolved points remain?
NO
Exit
YES
Search cache
Search cache for exact match with ABORT results
422
424
Match found?
NO
YES
Store solved results in cache
If current compare effort same as cached effort then ABORT; Otherwise use algorithm trace for comparison
426
428
Unsolved points remain?
NO
Exit
YES
Store solved results in cache
Use design characteristic to guide comparison
430
Exit

FIG. 4

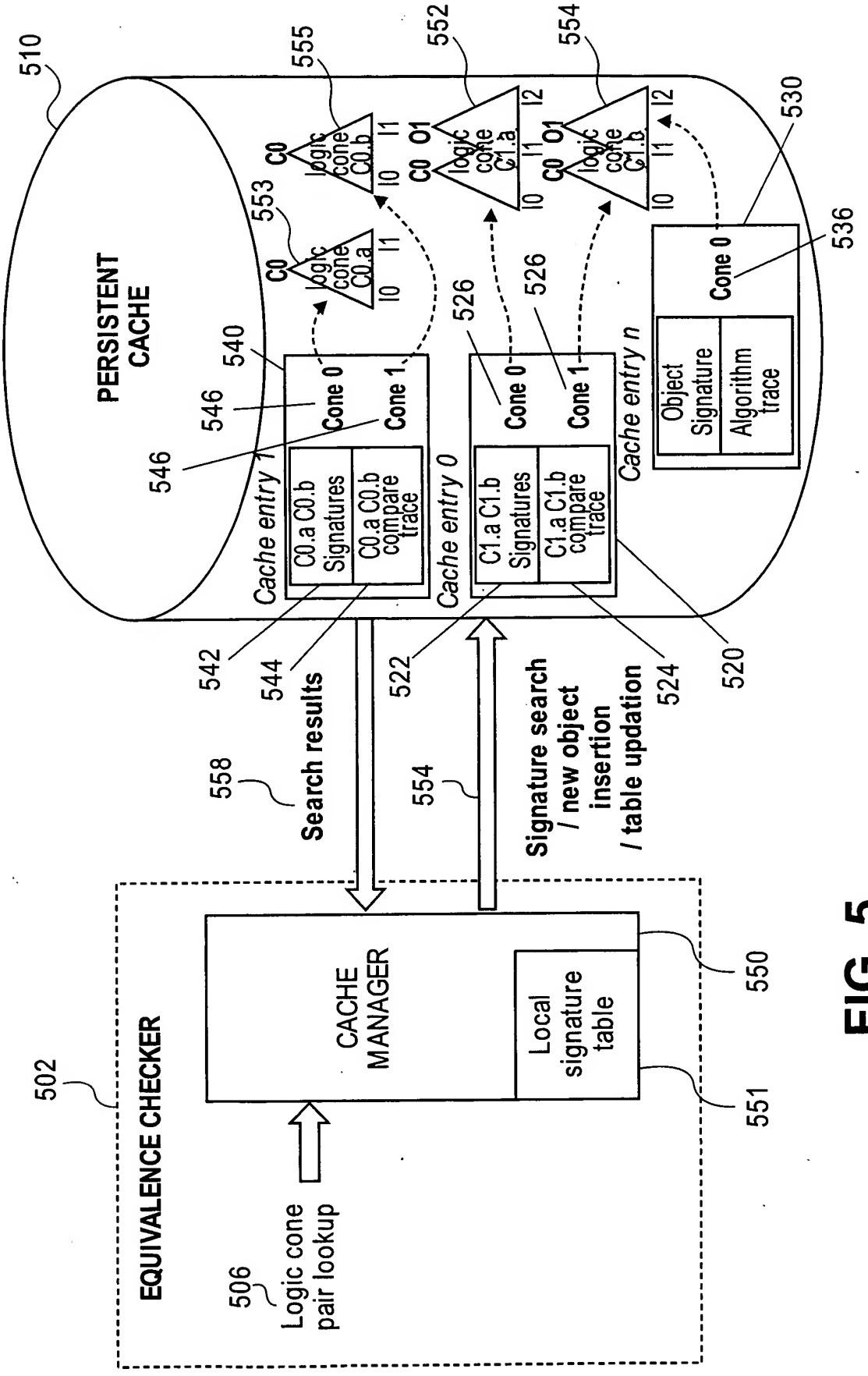
510
PERSISTENT CACHE
555
552
554
553
C0
C0 O1
logic cone C0.b
logic cone C1.a
logic cone C1.b
logic cone C0.a
I0 I1
I0 I1 I2
530
536
Cone 0
Object Signature
Algorithm trace
540
546
526
Cone 0
Cone 1
Cache entry 1
Cache entry 0
Cache entry n
C0.a C0.b Signatures
C0.a C0.b compare trace
C1.a C1.b Signatures
C1.a C1.b compare trace
542
544
522
524
520
558
Search results
554
Signature search / new object insertion / table updation
502
EQUIVALENCE CHECKER
CACHE MANAGER
Local signature table
550
551
506
Logic cone pair lookup

FIG. 5